KENYATTA UNIVERSITY

UNIVERSITY EXAMINATIONS 2017/2018

END OF YEAR EXAMINATION FOR THE DEGREE OF BACHELOR OF MEDICINE AND BACHELOR OF SURGERY (MBChB Level VI)

HMS: SURGERY AND ORTHOPAEDICS– SHORT ANSWER QUESTIONS

Date: Thursday 22nd November 2018 **Time: 9.00 a.m. – 12.00 p.m.**

12:20 pm

INSTRUCTIONS:

1. **Attempt all questions**
2. **Answer in the space provided after each question**

QUESTION 1

50 yr old female from the Aberdares mountain range in Kenya presented with a 2 years history of an anterior neck swelling. Two of her five sisters were treated for goiter. She had no problem with swallowing, breathing or change of voice. She was in good general condition. PR =80bpm, BP=120/80. The goiter was bilateral, symmetrical and barely visible (with the neck in neutral position). It was smooth and soft to firm in consistency. No palpable nodes. Her thyroid function tests were normal.

a). What are the two most likely causes of her goiter in terms of aetiology? **(2 Marks)**

1. _____
2. _____

b). Describe the type of her goiter in terms of classification of goiters. **(2 Marks)**

_____

c). What is the grade of this goiter in terms of clinical grading? **(1 Mark)**

_____

d).What radiological investigations are useful in this patient and why?

(1/2 mark for investigation and ½ mark for the reason)

_____

_____

e). What is your initial treatment plan in this patient **(2 Marks)**

_____

_____

f). Give two common indications of thyroidectomy in Kiambu Hospital **(2 Marks)**

1. _____
2. _____

QUESTION 2

A 50 year old 50 kg lady was admitted with acute-on-chronic intestinal obstruction for 10 days. She had appendicectomy done five years earlier. On examination, she was delirius, severely dehydrated, deep breathing, BP= 50/0, PR= 140bpm, feeble pulse. Her abdomen was grossily distended, percussion note was tympanic and no shifting dullness. The bowel sounds were increased and high pitched. A catheter passed showed no urine. Urea was 10 (normal =2.5-7.1 mmol/L). Serum sodium was 140mEq/L and Potassium was 2mEq/L.

a) What is your initial estimate of amount of IV fluid resuscitation requirement in this patient for the next 24 hours. **(1 Mark)**

_____

b) Given the known potassium level of 2mml/L, calculate the initial estimate of her potassium deficit for purposes of potassium supplementation in this patient. **(1 Mark)**

_____

c) What is the initial IV fluid of choice in this patient and why? **(2 Marks)**

1.Fluid _____

2. Reason _____

d) What is the pathophysiology and clinical implication of the deep breathing seen in this patient? (2 Marks)

_____

_____

_____

_____

_____

e) The surgeon and the anaesthetist decided that this patient needs emergency surgery for relief of intestinal obstruction. At what point of resuscitation will she be ready for theatre? (end point resuscitation for theatre). (4 Marks)

1. _____
2. _____
3. _____
4. _____

QUESTION 3

a). Name 4 pathological conditions of the large gut where colostomy can be indicated. (**2 Marks**)

1. _____
2. _____
3. _____
4. _____

b). Name 2 conditions where ileostomy can be indicated. (**1 Mark**)

1. _____

2. _____

c). Name 5 complications of colostomy/ileostomy **(2.5 Marks)**

1. _____
2. _____
3. _____
4. _____
5. _____

d). Name 2 conditions where permanent colostomy or ileostomy may be considered. **(1 Mark)**

1. _____
2. _____

e). What is the preferred period to close a temporary colostomy **(1 Mark)**

_____

f). Name 4 different types of colostomy (excluding permanent and temporary colostomy)

(2 Marks)

1. _____
2. _____
3. _____
4. _____

g). What is the elective anatomical position of a permanent colostomy in the left lower quadrant. **(1/2 a Mark)**

_____

QUESTION 4

A 60 years old lady was diagnosed with CA of the right breast. Systemic review in her history was normal. She was in a good general condition. The breast mass was located in outer upper quadrant and part of it was in the areola region. It was 3cmX3cm. It was not attached to the skin and it was freely mobile over the underlying structures. The nipple was deformed and pulled towards the mass. Three mobile nodes were palpated in the ipsilateral axilla. The liver was not palpable.

a) Based on the above clinical characteristics (clinical staging), what is the stage of her disease in terms of TNM classification? **(1/2 Mark)**

_____

b) Based on the above clinical characteristics (clinical staging), is this disease early breast cancer (EBC) or advanced breast cancer (ABC)? **(1/2 Mark)**

_____

c) What else can be done to complete the staging? (3 Marks)

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____

d) Complete staging was done. It confirmed that the disease was in the same stage shown by the clinical staging. Among other things, the biopsy had reported ductal carcinoma. What other important information from the biopsy specimen is needed to plan the full treatment of this patient? **(3 Marks)**

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____

e) Baseline tests (FHG, UEC, Urinalysis) are normal. Sentinel node biopsy was negative. What type of mastectomy will she require for definitive treatment of the disease in her stage and WHY? **(1 Mark)**

Type- _____

Reason- _____

f) How will you establish whether she will need hormonal manipulation therapy or not?

(1 Mark)

1. _____
2. _____

g) What is HER2 test used for? **(1 Mark)**

_____

QUESTION 5

A 35 year old man presents with a 3 month history of recurrent epigastric pain, worse prior to meals and at night. He has no weight loss. You suspect he has a duodenal ulcer. On endoscopy he has a superficial gastric ulcer and tests positive for helicobacter pylori infection .

a) List 4 laboratory method of assessing for the presence of helicobacter pylori infection in this patient **(2 marks)**

1. _____
2. _____
3. _____
4. _____

b) Indicate one therapeutic drug and dose regimen commonly used in H Pylori eradication in an adult **(2 mark)**

_____

c) List 5 complications of surgical importance related to a gastric ulcer **(5 marks)**

1. _____
2. _____
3. _____
4. _____
5. _____

d) Name the surgical procedure performed for recurrent Duodenal ulcers **(1 mark)**

_____

QUESTION 6

A group of about 20 victims is brought to the accident and emergency unit from a scene of a collapsed building. You are in charge of triaging the patients and conducting the initial resuscitation. One patient is suspected to have internal abdominal bleeding from the chest exam and you perform a diagnostic peritoneal lavage(DPL).

a). Indicate the various categories of coding of victims of a mass accident

(2.5 marks for class 0.5 marks for colour)

1. _____
2. _____
3. _____
4. _____
5. _____

b). List 5 findings that are indicative of a positive diagnostic DPL for intraperitoneal injury. List 5 positive DPL findings. **(5 marks)**

1. _____
2. _____
3. _____
4. _____
5. _____

c). List 2 chest examination findings that would raise suspicion for an abdominal injury.

(2 marks)

1. _____
2. _____

QUESTION 7

An adult male is brought to hospital from a fire accident scene with a 40% , 2nd degree burns. His weight is estimated to be 60 kgs.

a) Apart from the depth and surface area of a burn injury, indicate 5 other indications for admission of a victim to the burns unit **(5 marks)**

1. _____
2. _____
3. _____
4. _____
5. _____

b) Applying the Parklands formular calculate the fluid replacement ratios required for the patient above. **(3 marks)**

_____

_____

_____

c) In reconstruction of burn wounds differentiate a pedicled flap from a free flap. **(2 marks)**

_____

_____

_____

_____

_____

_____

QUESTION 8

a) Cancer of the esophagus is a common cause of dysphagia. Name three other common causes of dysphagia? **3 marks(1 Mark per response)**

1. _____
2. _____
3. _____

b) Name four symptoms associated with local disease spread in carcinoma of the esophagus.

2Marks(1/2 mark per response)

1. _____
2. _____
3. _____
4. _____

c) Name the four investigations you would order to diagnose and stage carcinoma of the esophagus. **2 marks(1/2 mark per response)**

1. _____
2. _____
3. _____
4. _____

d) Name two palliative and one curative intervention you would consider for distal third carcinoma of the esophagus. **3marks(1 Mark per response)**

1. _____
2. _____

QUESTION 9

Mr. A, 45-year-old man, presents to the Kiambu casualty with a 7 day history of abdominal pains, vomiting and fever. On the day of admission, the patient, confused, lethargic and dizzy.. The patient's vital signs are: temperature, 101.5 ◦F; heart rate, 120 bpm; respiratory rate, 30 breaths/min; blood pressure, 70/35mmHg; and oxygen saturation of 80% on pulse oximetry. Abdominal examination reveals signs of peritonitis and an erect abdominal x ray shows air under the diaphragm. The medical officer intern makes an impression of sepsis.

What are the factors that influenced this impression?

a) By Using quick Sequential (sepsis-related) Organ Failure Assessment Score (qSOFA):

(2 Marks)

_____

_____

_____

_____

b) Outline the management bundle for Mr A before surgery **(6 Marks)**

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____

c) After the initial resuscitation, the medical officer intern entertains the possibility of the patient having septic shock. How do you make a diagnosis of septic shock? **(2 Marks)**

_____

_____

_____

_____

QUESTION 10

Mr. B is admitted at Kiambu Hospital surgical wards with a chronic leg wound that developed after necrotising fascitis. On examination, the wound covers the anterior and lateral aspects of the leg from the knee to the ankle; its pink and bleeds to touch. A full hemogram done has the following parameters: WBC 5400/dl; platelets 247 000/dl, Hb 6.7g/dl/ MCV 69.7(75-100) and MCH 22(25-35). The patient is being prepared for split thickness skin grafting.

a) What is patient blood management? **(1 Mark)**

_____

_____

_____

_____

b) Outline the pillars of patient blood management **3 marks (1 mark per response)**

1. _____
2. _____
3. _____

c) How would you manage Mr B during the perioperative period using the patient blood management strategies? **(6 Marks)**

_____
_____
_____
_____
_____
_____
_____
_____
_____
_____
_____
_____

QUESTION 11

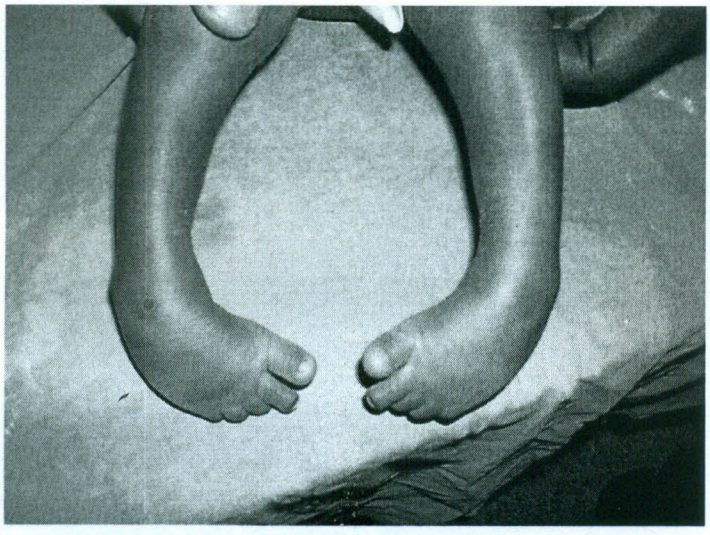
After ileostomy for an elective resection, the fluid input/output chart in the first 24 hrs showed the following: ileostomy output= 2,500mls. Urine output =500ml. Drain output= 800mls.NGT output=600mls. Urine output=1000mls. The IVfluid input was 3000ml. Patient was on nil per os. Balance this fluid chart and use it to establish the fluid requirement for the next 24 hrs.

Balancing – **7 Marks**

_____
_____
_____

Calculation of fluid requirement for next 24 hrs – **3 Marks**

QUESTION 12 – Start in new page.



a) What is the disorder shown in the photo above? **1 Mark.**

b) List the four (4) deformities that are present in this disorder indicating where in the foot each of the four deformities is found. **4 Marks**

DEFORMITY	LOCATION IN THE FOOT

c) What is the name of the protocol/technique used in the treatment of this disorder in Kiambu District Hospital? **(1 Mark)**

_____

d) Briefly describe the technique above. **(4 Marks)**

_____

_____

_____

_____

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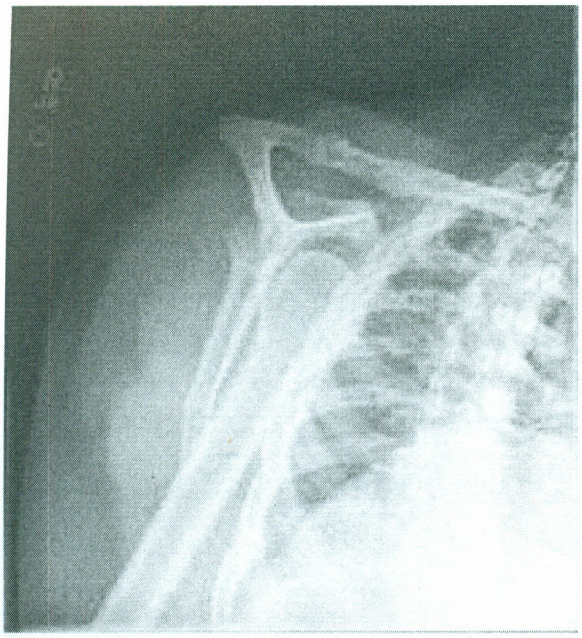
_____

QUESTION 13



a) What is the diagnosis from the x-ray above. **(1 mark)**

b) What other views can be done in evaluation of the above pathology? **(1 mark)**

c) What are the expected findings on doing the above test on one of the views above.

(2 marks)

d) Briefly outline how you would treat this patient with details of any surgical procedure you would wish to carry out. **(5 marks)**

e) What is the commonest serious complication of the above pathology in a young athlete. **(1 mark)**

QUESTION 14

A 15 year old boy gives a history of sudden "buckling" of his right knee when climbing stairs or running, whereby the knee cap goes to the lateral side of his knee needing to be returned to its position manually with significant pain. This has happened 5 times in the last 4 months;

a) What is the diagnosis **(1 Mark)**

b) What specific clinical test is usually positive in this condition **(1 Mark)**

c) List two clinical findings such a knee in the acute phase **(1 Mark)**

1. _____

2. _____

d) Name two most relevant investigation{s} you would order and name any two abnormal findings that would be expected in each of them. **(2 Marks)**

1. Investigation _____

   Findings _____

   _____

2. Investigation _____

   Findings _____

   _____

e) How would you initially manage the patient? **(2 Marks)**

_____

_____

_____

_____

_____

f) What is the long term definitive management? **(2 Marks)**

_____

_____

g) Name any two conditions other than the above that may present with " buckling" of the knee **(1 Mark)**

1. _____

2. _____

QUESTION 15

a). Name four types of cerebral palsy (CP) **(2 Marks)**

1. _____
2. _____
3. _____
4. _____

b). Name four possible aetiologies of CP **(4 Marks)**

1. _____
2. _____
3. _____
4. _____

c). What is the usual and most noticeable type of CP? **(1 Mark)**

_____

d). Name any four types of gait seen in patients with CP **(2 Marks)**

1. _____
2. _____
3. _____
4. _____

e). Which form of CP is sometimes managed surgically? **(1 Mark)**

_____

QUESTION 16.

A basketball player experiences sudden and severe pain in his left knee as he jumps to dunk the ball and is unable to bear weight or extend the knee against gravity due to weakness and pain in the same knee. He has to be carried off the court because of inability to walk.

a). What is one most likely condition that the player has just developed? **(1 Mark)**

_____

b). what would be the clinical finding(s) in the answer above **(4 Marks)**

1. _____
2. _____
3. _____
4. _____

c). Suggest two simple investigations that will confirm your diagnosis **(1 Mark)**

1. _____
2. _____

d). Recommend the most appropriate way of managing the injury named above **(1 Mark)**

_____

e). What additional form of management is important in the complete recovery from the injury **(1 Mark)**

_____

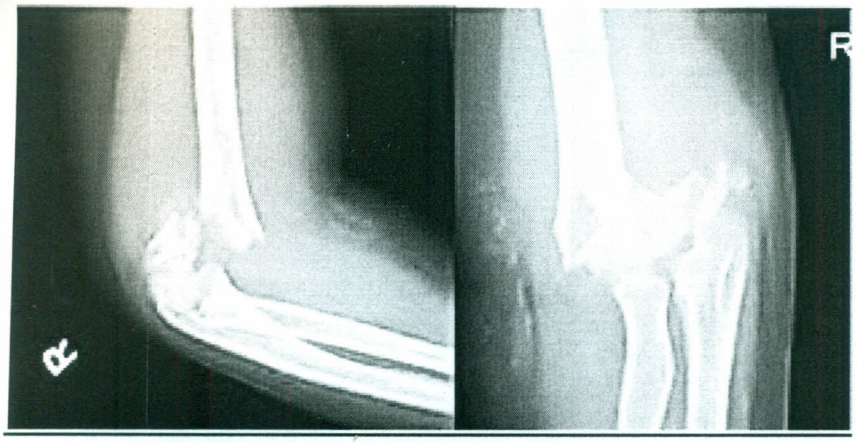
f). name any two complications that could arise from the treatment above **(1 Mark)**

1. _____
2. _____

g). True or False, he is unlikely to resume playing basketball. **(1 Mark)**

_____

QUESTION 17



a). What is the injury shown in the x-ray above **(1 Mark)**

_____

b). Classify the injury **(1 Mark)**

_____

c). What is your immediate concern in a patient with such an injury? **(1 mark)**

_____

d). What is the definitive treatment for this injury? **(1 Mark)**

_____

e). What is the commonest long-term complication seen in patients with this injury? **(1 Mark)**

_____

f). List four other complications associated with this injury **(2 Marks)**

1. _____
2. _____
3. _____
4. _____

g). For any three of the complications you have listed, indicate one way you would prevent the complication from occurring and one way in which you would treat the complication in the event that it occurred. **(3 Marks)**

COMPLICATION	PREVENTION	TREATMENT

QUESTION 18. START ON NEW PAGE

a). Name 3 components of the osteameatal complex? **(3 marks)**

1. _____
2. _____
3. _____

b). Describe the epithelial lining of the nose **(3marks)**

_____
_____
_____
_____
_____
_____

c). Name 2 common areas of haemorrhage in the nose. **(2 marks)**

1. _____
2. _____

d). What is the basic pathophysiology of sinusitis. **(2 marks)**

_____
_____
_____
_____

QUESTION 19. START ON NEW PAGE

a). List at least three (3) indications for a Micturating Cystourethrogram (MCU) – **(3 Marks)**

1. _____
2. _____
3. _____

b). List at least two (2) findings of a Suspicious Breast Mass on a Mammogram – **(2 Marks)**

1. _____
2. _____

c). Describe two (2) signs of testicular torsion on Ultrasound **(2 Marks)**

1. _____

2. _____

d). List at least three (3) findings of Congestive Cardiac Failure (CCF) on a Chest Xray – **(3 Marks)**

1. _____

2. _____

3. _____

e). State three (3) findings of a Tension Pneumothorax on a Chest Radiograph (CXR) –

(3 Marks)

1. _____
2. _____
3. _____

f). State at least two (2) findings in the Computerized Tomography Scan (CT Scan) of the Head in a Patient Suspected to have Stroke/ Cerebral Vascular Accident (CVA) – **(2 Marks)**

1. _____

2. _____

QUESTION 20.

a). Give three examples of benzodiazepines. **(3 Marks)**

1. _____
2. _____
3. _____

b). Benzodiazepines are used as "date rape" drugs. What properties make this possible?

(4 Marks)

1. _____
2. _____

c). What are the cardiovascular pharmacodynamic properties of ketamine? **(3 Marks)**

_____

_____

_____

_____

_____

_____